Allergy Abstracts

Editor

M. M. ALBERT
Brooklyn

Associate Editors

M. HARTEN
Brooklyn, N. Y.

E. H. WALZER
Bridgeport, Conn.

E. W. KAILIN
Washington, D. C.

R. A. CHAIT
Brooklyn, N. Y.

H. J. FRIEDMAN
Cleveland, Ohio

J. SHERMAN
Baltimore, Md.

B. B. SIEGEL
Far Rockaway, N. Y.

RICHARD WISEMAN
Syracuse, N. Y.

KATHERINE BOWMAN
Brooklyn, N. Y.

Advisory Editor

M. WALZER
Brooklyn, N. Y.

From the Allergy Division of
The Jewish Hospital of Brooklyn

Volume 16, Number 5 September, 1951

Asthma and Hay Fever

Treatment of Allergic Disease of the Bronchi. Feingold, B. F.: J. A. M. A. **146**: 319, 1951.

In the pathology of allergic diseases 2 types of tissue changes are observed: (1) the reversible; and (2) the irreversible. The first type is characterized by edema, spasm of smooth muscle, and stimulation of glands and is induced by such antigens as pollens, epidermals, foods, serums, and drugs. It involves only the conducting portion of the lungs or bronchial tree. Hydration by oral and intravenous methods, control of food and environmental factors, and specific pollen and epidermal treatment are important in the proper management of these conditions. The irreversible or fixed tissue changes are induced by such antigens as bacteria, bacterial products, serums, and drugs, and are identified with death of cells and vascular damage. These tissue changes affect the respiratory portion of the lung and are observed in such diseases as periarteritis nodosa, rheumatic disease, and recurrent or malignant Loeffler's syndrome. The frequency with which upper respiratory infections accompany allergic respiratory diseases has caused a misconception as to the role bacteria and bacterial products play in these allergic diseases. The terms asthmatic bronchitis and allergic bronchitis imply that bacteria or bacterial products are the causative agents of these allergic states. This impression results from failure to recognize that infection may play a dual role. It may produce tissue hypersensitivity with irreversible tissue changes characterized by death of cells and vascular damage which, in the lungs, are limited to the respiratory portion of these organs. Second, infection may influence the course of existing allergic disease caused by sensitivity to antigens which produce the reversible type of allergic tissue

changes. In that case, it may produce 1 of 2 types of distinct patterns depending on the nature of the infection. One pattern is observed with such infections as pertussis and viral diseases in which, during the period of invasion, there is an aggravation of the allergy. As the disease approaches its climax the allergic symptoms decrease only to recur during convalescence. The second pattern is observed in bacterial infections of the upper respiratory tract. In such cases, the allergic symptoms are aggravated at the height of infection and improve as the infection decreases.

Since infection is only an influencing and not a causative agent the coexistence of infection and allergic disease should not be interpreted as a bacterial allergy. The recognition of this fact is important in the treatment of the allergic child who suffers from recurrent allergic pulmonary disease. The control of food, pollen, and epidermal factors is of paramount importance and will relieve many of these patients because vaccines, either stock or autogenous, are of no value. Through successful control of offending allergens children may suffer upper respiratory tract infections without any pulmonary manifestations of allergy and adequate allergic management may decrease the frequency or completely prevent upper respiratory infections. F.

Dramatic Respiratory Symptoms Induced by Sudden Withdrawal of ACTH. Keeton, R. W., Best, W. R., Hick, F. K., Montgomery, M. M., and Samter, M.: J. A. M. A. **146**: 615, 1951.

One patient with severe respiratory distress due to pulmonary fibrosis and another with chronic bronchitis and emphysema were treated for 60 and 45 days respectively with ACTH. Sudden withdrawal of the hormone was followed by the onset of severe respiratory symptoms. Readministration of the medication promptly alleviated the symptoms. Subsequently, gradual withdrawal of the hormone in one of the patients produced no ill effects. It is suggested that ACTH should not be abruptly discontinued in patients suffering from pulmonary disease. F.

The Effect of Ephedrine in Asthma and Emphysema. Whitfield, A. G. W., Arnott, W. M., and Waterhouse, J. A. H.: Quart. J. Med. **19**: 319, 1950.

Vital capacity studies and residual air determinations were performed in 16 nonasthmatic and in 10 asthmatic patients. Emphysema was diagnosed chiefly by the presence of a high ratio of residual air to total lung volume and by clinical symptoms. These studies were carried out prior to and from ½ to 1 hour after the administration of from 0.5 to 1 grain of ephedrine. An increase in vital capacity could be demonstrated in the asthmatic group only. Increasing the dose of ephedrine up to 4 grains failed to alter the results. H.

Status Asthmaticus in Adults Treated With Manual Compression of the Thorax. Epstein, L.: Nord. med. **41**: 549, 1949.

Two patients, moribund and in status asthmaticus, were treated by manual compression of the thorax synchronized with the patients' attempts at respiration. Both patients were cyanosed, unconscious, and had fully inflated chests and gasping respirations. Both recovered after treatment for 5 minutes. The author attempts to explain the mechanics of the procedure. The compression of the thorax deflates the lungs and makes inspiration possible. It is probable that mucus is expressed from the bronchial tree mechanically, thus allowing oxygen to reach the alveoli and so permitting the lungs to regain their functional capacity. H.

Sensitivity of the Respiratory Tract to Fungi. Alemany Vall, R.: Med. Clin. (France) **13**: 102, 1949.

A botanical study was made of fungi present in the environment of patients with bronchial asthma and allergic rhinitis. In 40 per cent of the cases, Hormodendrum, Alternaria, Aspergillus, Mucor, and Rhizopus were isolated. Penicillium was the predominant fungus in another 40 per cent of the cases. Other fungi groups were present in the remaining 20 per cent of cases. H.

The Operative Treatment of Bronchial Asthma. Cenek, R. Z.: Lek-Listy (Poland) **4**: 80, 1949.

Good results were obtained in 10 patients following cervico-dorsal sympathectomy for the treatment of severe bronchial asthma. Postoperative complications included transitory neuralgic pains in the arms, vasomotor rhinitis, and increased perspiration of the lower half of the body. H.

The Surgical Treatment of Bronchial Asthma. Nyst, P.: Arch. Chir. Neerl. **2**: 261, 1951.

Bilateral resection of the posterior bronchial plexus was performed in 11 patients. In 2 of the 11 patients, the sympathetic thoracic ganglia from 2 to 5 were also extirpated bilaterally; in 2 others they were extirpated on the left side only. No mortality or complications occurred. Only one patient was sufficiently free of asthmatic symptoms 3 years after the operation to warrant the discontinuance of symptomatic medication. Five patients still had slight attacks and 5 still had recurrent severe attacks. The writer is of the opinion that surgical treatment of bronchial asthma is indicated only when medical management fails completely. H.

Dermatology

Allergic Eczematous Contact Type Sensitivity of Equal Degree to Streptomycin and Dihydrostreptomycin. Sulzberger, M. B., and Distelheim, I. H.: Arch. Dermat. & Syph. **62**: 706, 1950.

The fact that dihydrostreptomycin is less toxic to the auditory and renal system than streptomycin prompted the authors to investigate the relative potency of dihydrostreptomycin and streptomycin as sensitizers.

Patch tests with both dihydrostreptomycin and streptomycin were performed on a nurse who exhibited an allergic contact-type eczematous dermatitis due to professional exposure to streptomycin. Positive reactions were obtained with both drugs.

It was concluded that, while the incidence of vestibular, aural, and renal reactions following the administration of dihydrostreptomycin is less than that with streptomycin, the local allergic eczematous contact-type reaction, as demonstrated by patch testing, appears to be equal with both drugs. C.

The Effect of ACTH and Cortisone on Drug Hypersensitivity Reactions. Carey, R. A., Harvey, McG., Howard, J. E., and Wagley, P. F.: Bull. Johns Hopkins Hosp. **87**: 354, 1950.

Patients with severe hypersensitivity reactions to iodine, sulfonamides, penicillin, acetylsalicylic acid, hydroxyl-phenyl-cinchoninic acid, and atropine were treated with either ACTH or cortisone. In almost every case, a dramatic response was obtained. One patient with paroxysmal (cold) hemoglobinuria and urticaria following chilling was studied in detail. During ACTH therapy, the

urticaria disappeared; however, the intracutaneous injection of histamine produced the usual response. The antigen-antibody reaction responsible for the hemolysis of erythrocytes was not affected. The possible implication of these findings is discussed. R.W.

Atopic Dermatitis With Bilateral Cataracts. Senear, F. E.: Arch. Dermat. & Syph. **63**: 162, 1951.

Bilateral cataracts developed in a 15-year-old asthmatic boy. He had had eczema for 3 years prior to the onset of eye symptoms. Atopic eczema had been present in infancy. There was no history of exposure of the face to roentgen rays. C.

Fixed Eruption and Urethritis Due to Phenophthalein. Heber, H.: Brit. J. Dermat. **62**: 22, 1950.

A fixed drug eruption and urethritis due to phenolphthalein were observed in a 25-year-old man. The patient had had 5 attacks, each manifested by eruptions on the glans penis, scrotum, and left hand, and accompanied by a urethral discharge. On each occasion, these lesions followed the ingestion of Agarol or Ex-lax. During a quiescent period, the symptoms were reproduced by the experimental feeding of phenolphthalein. Urethritis due to phenolphthalein has not previously been reported. E.W.

Investigation of Occupational Dermatoses in the Citrus Fruit Canning Industry. Birmingham, D. J., Campbell, P. C., Jr., Doyle, H. N., and McDonald, J. M.: Arch. Indust. Hyg. & Occup. M. **3**: 57, 1951.

Workers in citrus fruit canneries developed various forms of skin disorders including contact dermatitis, onychia, paronychia, and erosio interdigitalis blasomycetica. Patch tests performed on employees in a number of canneries failed to show reactions to the fresh pulp or juice of grapefruit or orange. There was one positive reaction among 10 persons tested with alkali-treated grapefruit pulp and one among 3 tested with alkali-treated orange pulp. Grapefruit and orange oil were shown to be primary irritants as evidenced by the uniformity of positive patch test reactions evoked in control individuals. Patch tests performed with the dye used in the industry gave negative results. On the basis of these findings, it was concluded that most of the dermatitides encountered in this industry are of a nonspecific nature and can, in a large measure, be avoided by following certain recommended precautions. F.

Treatment of Rhus Dermatitis. Hoagland, R. J., and Myers, P. W.: U. S. Armed Forces M. J. **1**: 562, 1950.

A study of the comparative efficacy of Pyribenzamine ointment and calamine lotion with phenol and menthol as local therapeutic agents in Rhus dermatitis was made. These agents were applied simultaneously to lesions of similar severity in 70 patients. The medications were equally effective in the control of pruritus. In one-half of the patients, the speed of healing was the same for both agents. Of the remaining one-half, 71 per cent improved more rapidly with Pyribenzamine ointment. Three patients treated with Pyribenzamine ointment developed urticaria; in 4 patients, this medication produced erythema and a burning sensation which retarded healing. E. W.

Exfoliative Dermatitis Following the Administration of Penicillin. Langdon, E.: U. S. Armed Forces M. J. **1**: 210, 1950.

Two cases of exfoliative dermatitis following the intramuscular administration of penicillin in an absorption-delaying vehicle are reported. The first patient, a 23-year-old man, developed dermatitis one week after the last injection of penicillin. He was hospitalized for one week and made an uneventful recovery. The second patient, a 53-year-old man, had received 2 daily doses of penicillin and showed a reaction 4 days later. This patient had a past history of nephritis. He became progressively worse and died of renal failure and uremia about 6 weeks after his last dose of penicillin. Post-mortem examination revealed chronic glomerulonephritis and exfoliative dermatitis.
E. W.

A Study of the Allergenic Constituents of Lanolin (Wool Fat). Sulzberger, M. B., and Lazar, M.: J. Invest. Dermat. **15**: 453, 1950.

Patients known to be sensitive to lanolin were patch tested with 12 components of lanolin or with commercial products containing a lanolin base. Three subjects used as controls showed negative reactions to all the test materials. Positive reactions were obtained with the lanolin preparations, the proprietary ointment containing lanolin alcohols, the mixed lanolin alcohol fraction, and with the lanolin acid-mixed lanolin alcohol fraction. It is suggested that the immunologically active agent in lanolin is a constituent or constituents of the mixed alcohols of wool fat and is not present in the other fractions, such as the mixed fatty acids, cholesterols, or the lanosterols.
R. W.

Dermal Spreading of Hyaluronidase as Influenced by Prolonged Local Treatment With Adrenal Cortical Extract. Hayes, M. A., Reed, T. G., and Baker, B. L.: Proc. Soc. Exper. Biol. & Med. **75**: 361, 1950.

An area of skin on rats was treated locally with adrenal cortical extract for 4 months. Hyaluronidase with an indicator was then injected intracutaneously in the pretreated site and also in a control untreated site on the other side of the animal. It was found that the initial phase of spreading of the indicator plus enzyme was much more rapid in the pretreated than in control areas. The areas treated with adrenal cortical extract also showed larger reactions than untreated sites. It is suggested that this effect may be due to a modification of the connective tissue ground substance by adrenal cortical extract.
B. S.

Contact Dermatitis Due to Synthetic Resins in Shoe Linings. Jordan, J. W.: Arch. Dermat. & Syph. **62**: 671, 1950.

Forty-seven proved cases and 29 suspected cases of dermatitis of the feet due to synthetic resins in shoe linings were observed. Patch tests with materials obtained from shoe linings gave positive reactions in the 47 cases which were tested.

In an attempt to determine whether one specific underlying agent was responsible for the eruption, 13 patients were tested with representative, fully polymerized, unaltered resins obtained from various manufacturers. None of these plastics yielded positive reactions, indicating that there was no single common factor which was responsible for dermatitis due to shoe linings.

It is emphasized that any one of several chemicals present in the resin as employed in the finished article may be the cause of dermatitis. Therefore, it

is not sufficient, in suspected resin dermatitis, to test patients with a sample group of basic resins. Patch tests should be performed with the completed compound to which the skin has been exposed. C.

Skin Sensitization to Nitrogen Mustard With Reference to the Cytologic Differences Between Primary and Eczematous Reactions. Nexmand, P. H.: Dermatologica **100**: 73, 1950.

Nitrogen mustard compound (2:2-dichloro-N-methyl diethylamine) can produce specific cutaneous sensitization in man after an incubation period of 8 days.

Differential cell counts were made on the exudates from bullous toxic reactions and from vesicular eczematous reactions. The reactions were also examined histologically. As a result of these studies, the author concludes that lymphocytes and their mononuclear relatives play an important role in the development of eczematous sensitization. H.

On Dermatitis Caused by Formaldehyde and Its Compounds. Pirila, V., and Kilpio, O.: Ann. Int. Med. Helsinki **38**: 38, 1949.

During a 4 year period, 30 cases of dermatitis due to formalin or formaldehyde resin were observed. Twenty-eight of these patients were sensitized in the course of their occupations, while the others were sensitized by medicines, insecticides, and so on. The majority showed sensitivity to formalin only. Hexamethylenetetramine, when administered orally to 3 formalin-sensitive patients, produced a flare-up of a previously healed contact dermatitis in 2 cases and activated sites previously patch tested with formalin in 1 patient. H.

The Risks of Local Anesthesia in Subjects Who Have Become Sensitized to the "Para Group." Sidi, E., and Dobkevitch, S.: Semaine d. hôp. de Paris **26**: 1821, 1950.

Cross sensitization to the "para group" demonstrates the danger of local anesthesia with procaine in patients with dermatitis caused by sensitivity to paraphenylenediamine and sulfonamides. Positive tests with procaine are reported in from 54 to 62 per cent of such cases. A recurrence of the dermatitis and a rise in temperature followed the experimental oral administration of one ampoule (5 ml. of 2 per cent procaine) in 60 per cent of such cases tested. Local injection of procaine in these cases results in shock, diarrhea, choking sensation, malaise, fever, and reactivation of patch test sites, together with spread of the existing dermatitis. Procaine, or other products with para primary substituted amines, should not be used in patients with sensitivity to "para group" compounds. Isomers, such as cocaine, are preferred in such cases. H.

Treatment of Rhus Dermatitis. Hoagland, R. J., Myers, P. W., and Cosand, H. C.: J. A. M. A. **146**: 613, 1951.

In 92 patients with Rhus dermatitis, areas of dermatitis of about equal intensity and duration, on the same patients, were treated with different medications. When circumscribed areas of equal intensity could not be found, a patch of dermatitis was divided by an indelible line into equally involved areas, each of which was treated with a different medication. A total of 217 areas were treated with the following remedies: 2 per cent tripelennamine cream, dibucaine ointment, 5 per cent tannic acid solution with chlorothen citrate, phenol 0.4 per cent, camphor ammonium alum and isopropyl alcohol 39.5 per cent, a compound of acetic acid, hydrogen peroxide, benzethonium chloride 0.75 per cent, pro-

pylparahydroxybenzoate 0.02 per cent, water, and aromatics, 2 per cent zinc sulphate solution, and ethyl chloride spray. None of these drugs were found to exert a marked influence on the course of the dermatitis. The antihistaminic agents appeared to speed the healing process slightly in certain patients, but in over half the cases they were no more effective than other agents. Ethyl chloride spray and zinc sulphate solution were practically valueless. Moist, warm compresses appeared to accelerate the recovery of the cellulitis-like lesions and antihistaminics seemed to help the inflammatory type of lesion. It was concluded that Rhus dermatitis is best treated with creams or solutions containing local anesthetics and antihistaminics. In cellulitis-like or oozing lesions, warm compresses are indicated. F.

Otorhinology and Ophthalmology

Distribution and Comparison of Nasal Cilia. Tremble, G. E.: Arch. Otolaryng. **53**: 483, 1951.

The thickness and distribution of the cilia of normal human nasal mucosa and submucosa varies widely in different areas of the nose. Except for a few areas, the respiratory tract is lined with ciliated epithelium. In the adult, the anterior third of the septum and lateral wall, the olfactory area, the pharynx, and the edges of the vocal cords are devoid of cilia.

The thickness of nasal mucous membrane is dependent upon the degree of impact and air flow over the surface. Thus, the exposed inactive anterior third of the septum and lateral wall has a thick membrane of from 10 to 15 cells in depth, while the membrane in the active posterior two-thirds has a layer of from 8 to 10 cells. In protected areas not exposed to direct air currents, such as the middle and inferior meatuses, the cells are 4 or 5 layers deep. The membrane is thinnest in the sinuses where the exchange of air is negligible. The mucosal lining of the sinuses consists of only 2 or 3 layers of short cuboidal cells and is often only a fraction of a millimeter in thickness. C.

Miscellaneous Allergies

Cottonseed Protein vs. Cottonseed Oil Sensitivity. IV. An Objective Approach to the Diagnosis of Food Allergy as Applied to Cottonseed Atopy. Loveless, M. H.: Ann. Allergy **8**: 15, 1950.

Four cottonseed-sensitive patients were studied to determine the minimal dose of cottonseed extract required to provoke an allergic response. Direct testing of these patients was done by the conjunctival, intracutaneous and scratch techniques. Passive transfer studies were done by the Prausnitz-Küstner technique and by the reagin exhaustion method. In the latter studies, varying amounts of antigen were mixed with constant amounts of reagin and introduced intracutaneously. On the next day, the sites were retested to determine the minimal amounts of antigen required to exhaust the reagin. A ratio was then computed between the ingestion threshold and the thresholds obtained with the other methods. It was found that the ratio between the ingestion threshold and the conjunctival threshold varied from 1,400 to 14,000; the ratio between the ingestion and the intracutaneous threshold was 183,000,000 to 10,000,000,000; the ingestion to the Prausnitz-Küstner was from 27,000 to 425,000; the ingestion to the neutralization was from 6.4 to 333; and the ingestion to the scratch test was from 51 to 2,000. Scratch testing of the patients with refined cottonseed oil or with saline washings of its water soluble contaminants failed to elicit positive reactions. Ingestion of cottonseed oil U.S.P. in quantities up to 30 ml. failed to elicit allergic symptoms in 3 of the patients. One patient

developed transient nausea after ingesting 20 ml. of cottonseed oil on 2 occasions. She was, however, able to tolerate similar quantities of corn oil. "The nausea was interpreted as being due to slight rancidity." E. W.

The Uses and Abuses of Antihistamine Drugs. Sherman, W. B.: Bull. New York Acad. Med. **27**: 309, 1951.

The use of antihistaminics in the treatment of various types of allergic disorders and their relative value in alleviating the symptomatology of many other conditions are discussed. The author suggests a classification of these drugs in order to facilitate the best utilization of each one for maximum therapeutic benefits. The author stresses the fact that these drugs are not curative and have very uncertain actions. R. W.

Allergy to Drugs. Hegyi, J., and Rajka, O.: Orvosi hetil. **90**: 803, 1949.

The use of various immunologic tests in the study of drug allergy is unsatisfactory. The authors used a reverse Prausnitz-Küstner test for their studies. The serum from patients with drug allergy was injected intracutaneously into patients under treatment with the particular drug. Volunteers, given a 3-day course of repeated oral doses of the drug, or an intramuscular or intravenous injection of the drug, also received intracutaneous test doses of the serum being studied. In 30 minutes, a positive reaction was observed in all subjects tested. Variable results were noted with other tests. Eight cases of sulfa sensitivity, 6 cases of organic arsenical sensitivity, and 1 case of barbiturate sensitivity were studied. H.

Cottonseed Protein vs. Cottonseed Oil Sensitivity. V. Cottonseed Asthma: Protein vs. Oil. Mitchell, J. H.: Ann. Allergy **8**: 23, 1950.

Eleven asthmatic patients, who were highly sensitive to cottonseed protein both clinically and immunologically as demonstrated by positive reactions to cutaneous, passive transfer, conjunctival, or therapeutic tests, failed to respond either locally or constitutionally when they were exposed to cottonseed oil by skin test, mucous membrane tests, inhalation, ingestion, or intramuscular injection. E. W.

Anaphylaxis

Changes in the Cholinesterase Activity of the Blood and Tissues in Allergy. Massino, S. A.: Arch. di pat. e clin. med. **12**: 30, 1950.

Acetylcholine is liberated from the tissues into the blood stream during anaphylactic shock and in the course of allergic reactions.

Cholinesterase determinations of the blood and tissues were carried out in dogs and rabbits sensitized with horse serum and bacterial antigens. Increased cholinesterase activity of the blood serum and tissues of many organs was recorded in these sensitized animals. H.

Tuberculin Type Sensitivity to Spinal Cord Antigen in Rabbits With Isoallergic Encephalomyelitis. Waksman, B. H., and Morrison, L. R.: J. Immunol. **66**: 421, 1951.

Rabbits were injected intracutaneously with homologous spinal cord tissue combined with heat-killed tubercle bacilli and Bayol F., the latter 2 substances acting as adjuvants. Positive skin tests of the tuberculin type were observed as

early as 4 or 5 days following the innoculation when the animals were tested with homologous nerve tissue. Neurological symptoms became manifest shortly after the skin reactivity developed, and there was a marked correlation between the amount of encephalomyelitis and the skin response. Animals innoculated subcutaneously or intraperitoneally failed to develop encephalomyelitis and showed essentially negative skin reactions. Only a few of the animals with encephalomyelitis showed positive corneal reactions. The outstanding pathological change found on sectioning the spinal cord was the greatly increased cellularity of the leptomeninges and subpial parts of the spinal cord. Skin reactivity could not be passively transferred even with large amounts of serum. The antigenic factor was found in a residue insoluble in water and ether. Dicumerol given in dosages which kept the prothrombin level below 50 per cent of normal had no effect on the incidence of experimental disease. R. W.

Experimental Hypersensitivity in the Rabbit. Disappearance Rates of Native and Labelled Heterologous Proteins From the Serum After Intravenous Injection. Gitlin, D., Lotta, H., Batchelor, W. H., and Janeway, C. A.: J. Immunol. **66**: 451, 1951.

Crystallized human serum albumin, crystallized bovine serum albumin and bovine serum gamma globulin were either labelled with dyes by diazotization or radio-iodinated with I^{131}. Both the pure and labelled materials were then injected intravenously into rabbits. Disappearance rates from the blood stream were measured by immunochemical methods and also by determining the amount of the labelled compounds remaining in the circulation. The results showed a 3-phase period of disappearance. During the first phase which lasted for 24 or 48 hours, equilibrium was established between the interstitial fluids and body cells. The second phase which lasted from the second to the sixth day following innoculation was characterized by a steady disappearance rate due to normal protein catabolism. The third phase began after the sixth day and often showed a rapid increase in the disappearance rate due to antibody formation with interaction and rapid removal of the complex formed. The authors stress the difficulties inherent in the use of labelled protein preparations for studying the behavior of antigens. R. W.

Pharmacology, Physiology, and Pathology

Passive Transfer of Atopic Hypersensitiveness in Man by Means of Leucocytes. Walzer, M. and Glazer, I.: Proc. Soc. Exper. Biol. & Med. **74**: 872, 1950.

Viable leucocytes were obtained from atopic patients according to the technique of Minor and Burnett, which employs bovine fibrinogen to hasten the sedimentation of erythrocytes in herparinized blood. The leucocytes obtained from the plasma by centrifugation were washed twice in Machlett capillary tubes with Tyrode solution, and the cellular sediment was then resuspended in 12 times its volume of Tyrode solution. Intracutaneous injections of 0.05 ml. of this suspension were made at several sites on the arms of nonatopic recipients. Delayed inflammatory reactions lasting several days usually occurred at these sites. Intracutaneous tests with allergens were performed at the prepared sites after seven days. The leucocytes obtained from 6 atopic patients with slight or moderate clinical and cutaneous sensitivities to pollens and animal danders were studied. Specific, but weak, passive transfer reactions were demonstrated in 5 cases. Tests with nonrelated allergens were negative. Erythrocytic suspensions from the same patients, leucocytic suspensions from normal subjects, and serum dilution controls gave negative results. Washing the leucocytes four times reduced their sensitizing power. AUTHOR'S ABSTRACT.

Newer Concepts of Chronic Cor Pulmonale. Ferrer, M. I.: New York State J. Med. **50**: 1817, 1950.

Twenty-one patients with pulmonary emphysema were studied by the cardiac catheterization method and pulmonary function tests. In those patients with mild emphysema and mild anoxia, there were no demonstrable alterations in the circulation. As anoxia increased in patients with emphysema, the pulmonary artery pressure, cardiac output, and blood volume also increased with a resultant pulmonary hypertension. Pulmonary hypertension frequently existed without any change in the heart, pulmonary artery size, or electrocardiogram. In patients with emphysema and cor pulmonale who were in cardiac failure, therapy with digitalis and phlebotomy resulted in a relief of the anoxia, a reduction in the pulmonary blood volume, and a lower cardiac output. As a consequence, there followed a lowering of the pulmonary blood flow and a decrease of the pulmonary arterial pressure. In patients with emphysema and circulatory changes without cardiac failure, a bout of acute anoxia, which may accompany attacks of bronchiolar obstruction or severe pulmonary infection, was the precipitating factor in the break of cardiac compensation. The 2 fundamental mechanisms which operate in the development of cor pulmonale are anoxia and reduction of the pulmonary vascular bed. When the anatomic reduction of the vascular bed plays the major role, as in pulmonary fibrosis, circulatory abnormalities are probably irreversible. However, when anoxia is the major factor in the development of cor pulmonale, most of the circulatory changes produced, including pulmonary hypertension, are reversible and amenable to proper therapy. B. S.

Experimental Determination of the Hypersensitive Diathesis in Man. Creger, W. P., Choy, S. H., and Rantz, L. A.: J. Immunol. **66**: 445, 1951.

Forty-eight medical students were injected with standard commercial influenza vaccine A & B, and their ability to form antibodies was studied. Two years later, 19 of these subjects were innoculated with human blood of a heterologous group and their capacity to produce antibodies was again evaluated. Two individuals reacted more vigorously to each of the antigenic stimulations than the rest of the group. It was found that exaggerated isoagglutinin production may occur in certain diseases of possible allergic etiology, such as disseminated lupus erythematosis, inactive rheumatic fever, hemolytic anemia, and erythema nodosum. The authors believe that a small number of human beings are immunological hyper-reactors and that this attribute may be important in the pathogenesis of certain diseases.

Total Inhibition of the Shwartzmann Phenomenon in Rabbits by Means of a Synthetic Antihistamine Derived From Phenothiazine. Vallery-Radot, P., Halpern, B. N., and Reber, H.: Semaine d. hôp. de Paris **26**: 1811, 1950.

Studies on the mechanism of the action of antihistamines indicate that these drugs act primarily on the vascular wall by altering the permeability of the wall.

RP 3277, a derivative of phenothiazine, was found to be the most powerful of all known antihistamines in its action on the vascular wall. Rabbits prepared for the Shwartzmann phenomenon received subcutaneous doses of 20 mg./kg. of RP 3277 thirty minutes before the provocative intravenous injection. Injections of RP 3277 were repeated on the following 3 days. In all instances, the Shwartzmann reaction was inhibited. Controls showed positive reactions. H.

Effect of Epinephrine on the Neutrophile Count of Normal and Adrenalectomized Mice. Stein, K. F., Martin, C., and Falk, D.: Proc. Soc. Exper. Biol. & Med. **76**: 110, 1951.

Mice were adrenalectomized, splenectomized, or left intact and then injected with epinephrine, lipoadrenal cortex, sex hormones, sesame or peanut oil. Peripheral white blood cell counts and bone marrow and peripheral differential counts were made before and after the injections. Adrenal cortical extract, in doses which caused a similar or greater eosinopenia in intact mice, did not produce such a pronounced neutrophilia as did epinephrine. The neutrophilia following epinephrine was similar in adrenalectomized and splenectomized animals. The other agents tested failed to show this effect. A higher proportion of neutrophilic to eosinophilic cells was found in the marrow of epinephrine-injected intact animals than was found in animals injected with adrenal cortical extract. This suggests that epinephrine may have a direct effect on the bone marrow. B. S.

Cortisone-Treated Schleroderma: Report of a Case With Autopsy Findings. Sharnoff, J. G., Carideo, H. L., and Stein, I. D.: J. A. M. A. **145**: 1230, 1951.

A 41-year-old woman was treated for scleroderma with cortisone. Marked improvement was noted within 24 hours of the beginning of therapy. The patient was maintained on 100 or 125 mg. of cortisone daily. Mild hypertension was noted for the first time about 6 weeks after the beginning of therapy, but treatment was continued because of increasing joint pains and stiffness. ACTH was substituted for cortisone, but the hypertension continued to increase.

The patient was readmitted to the hospital because of severe blinding headaches and vomiting. Shortly after the admission, 2 generalized convulsions occurred and the patient became comatose. Signs and symptoms of a hypertensive encephalopathy developed and death ensued on the fifteenth hospital day.

At autopsy, the kidneys showed severe vascular lesions of the type frequently found in scleroderma. In addition, there were thrombotic ischemic infarctions of the kidneys which have not been previously reported in scleroderma. These findings suggested that cortisone might have precipitated or accelerated the previously existing irreversible renal vascular disease which was responsible for the fatal outcome. F.

Failure of Adrenalectomy Immediately Following Stress to Prevent Eosinopenia in Rats. Love, W. D.: Proc. Soc. Exper. Biol. & Med. **75**: 639, 1950.

Rats were injected subcutaneously with epinephrine and eosinophile counts were done 10 minutes, 2 and 4 hours after the injection. Within 4 hours, there was a median decrease in eosinophiles of 80 per cent. When a bilateral adrenalectomy was performed within 10 or 15 minutes after the epinephrine administration, the median decrease in eosinophiles was 58 per cent. Tests made on sham-operated animals yielded results similar to those obtained in normals. When adrenalectomy was performed prior to the injection of epinephrine, there was no significant eosinopenic response. Since eosinopenia occurred following epinephrine, even though adrenalectomy had been completed within 10 minutes, it was concluded that the progressive eosinopenia in rats, occurring over four hours, was not dependent upon the continued secretion of the adrenal cortex.

B. S.

Hyaluronidase Action on the Permeability of Human Skin; Some Experiments, Mainly on Allergic Skin Reactions. Asboe-Hansen, G.: Acta dermat.-venereol. **30**: 27, 1950.

In order to study the effect of the spreading factor on healthy human skin, 0.1 ml. of extract of bovine testes (2 to 5 turbidity-reducing units per milliliter of physiologic sailne) was injected intracutaneously. Using dyes and radioactive substances, the spreading effect was estimated from the profiles of the wheals produced.

In allergic individuals, the wheal resulting from the intracutaneous injection of allergens at the site of the hyaluronidase wheal disappeared more rapidly than in the controls. Scratch tests on sites previously injected with hyaluronidase gave negative results (positive controls).

The viscosity of the ground substance of the skin (hyaluronic acid), which is reduced by hyaluronidase, is restored in 48 hours. H.

Influence of ACTH and Cortisone Upon Alteration in Capillary Permeability Induced by Hyaluronidase in Rats. Benditt, E. P., Schiller, S., Wong, H., and Dorfman, A.: Proc. Soc. Exper. Biol. & Med. **75**: 782, 1950.

Rats were injected intravenously with Evans blue solution and immediately thereafter received an intravenous injection of a measured amount of hyaluronidase. The increased rate of disappearance of Evans blue from the circulation, the decrease in serum protein concentration, and the increased hematocrit following the injection of enzyme indicated that an increase in capillary permeability had occurred. When the animals were pretreated with ACTH or cortisone for 5 days, the effects of the hyaluronidase were inhibited. The inhibition of the hyaluronidase effect appeared 24 hours after the onset of cortisone therapy, but was not significant until after 48 hours. When a single large dose of cortisone was given, no inhibition was demonstrable. Since the cortisone effect required from 24 to 48 hours to become evident, it is suggested that the cortisone is modified by some cellular process to form another compound, which acts directly on the connective tissue or the enzyme. B. S.

Hypothalamic Control of Anterior Pituitary Gland and Blood Lymphocytes. DeGroot, J., and Harris, G. W.: J. Physiol. **3**: 335, 1950.

Emotional stress (restraint or subcutaneous faradic shocks) in normal rabbits resulted in pronounced absolute lymphopenia, usually accompanied by absolute granulocytosis. The lymphopenia reached its maximum 3 hours after the initial stimulus. In hypophysectomized rabbits, emotional stress did not produce lymphopenia. The intravenous injection of pituitary extract still produced lymphopenia in hypophysectomized animals. The lymphopenic response to stress was not altered by denervation of the adrenal glands. The authors conclude that the adrenal medulla plays little part in the lymphopenic response. H.

Role of Cortisone in Regulation of Inflammation. Dougherty, T. F., and Schneebeli, G. L.: Proc. Soc. Exper. Biol. & Med. **75**: 854, 1950.

Mice were adrenalectomized 19 days after being sensitized with horse serum. Several hours after adrenalectomy, the animals were injected subcutaneously with a uniform dose of antigen. One group was given cortisone after the adrenalectomy and before the challenging dose of antigen. Numerous groups of control animals were used to study the various phases of the experiment. The

inflammatory reactions at the sites of antigen injection and of the adrenalectomy wounds were studied by excising the subcutaneous connective tissue at varying intervals and examining the cellular content of the areolar tissue spread thinly on slides. The eosinophiles were markedly decreased in all sensitized animals, regardless of whether adrenalectomy was done or cortisone given. In intact and adrenalectomized animals, the local inflammatory response to the injection of antigen was the same, namely, localized edema, degeneration of fibroblasts, invasion of leucocytes and macrophages. In the cortisone-treated group, the connective tissue became edematous, but the cellular changes were much less extensive and the inflammatory response was shortened. The traumatically induced inflammation in the adrenalectomy wounds exhibited a similar change with cortisone therapy. It is suggested that the inhibition of allergic, as well as traumatic inflammation by adrenal cortical secretions and cortisone, is effected by an antiphlogistic action of these hormones. B. S.

The Potentiating Action of Certain Xanthin Derivatives on Gastric Acid Secretory Responses in the Dog. Robertson, C. R., Rosiere, C. E., Blickenstaff, D., and Grossman, M. I.: J. Pharmacol. & Exper. Therap. **99**: 362, 1950.

Experimental studies in dogs with gastric pouches show that caffeine or theophylline administered intravenously potentiate histamine-induced gastric secretion. Caffeine also potentiates the secretory response to a meat meal, as well as to Urecholine, a parasympathomimetic drug. K.

The Effects of ACTH and Cortisone on Antibodies in Human Beings. Mirick, G.: Bull. Johns Hopkins Hosp. **88**: 332, 1951.

Fifty-nine patients were vaccinated subcutaneously with a mixture of pneumococcal polysaccharides. One-half of the group was treated with ACTH or cortisone. Antibody titers were measured prior to the innoculations and at intervals up to 21 days following the procedure. The untreated subjects acted as controls. The results showed that ACTH or cortisone did not suppress antibody formation but possibly had some enhancing effect. Serum globulin decreased in 13 out of 17 patients treated with ACTH and in 6 out of 12 individuals given cortisone. There was a slight suggestion that ACTH but not cortisone depressed skin reactivity. No correlation was observed between antipneumococcal antibody titers and serum globulin levels and a considerable fall in total globulin did not prevent a rise of antibody titers in a few patients. It is concluded that the beneficial effects derived from the use of either ACTH or cortisone in the treatment of human hypersensitivity states cannot be explained on the basis of suppressed antibody production. R. W.

Miscellaneous

A Study of the Antigen-Antibody Mechanism in Rheumatic Diseases. Brown, T., Wichelhausen, R., Merchant, W., and Robinson, L.: Am. J. M. Sc. **221**: 618, 1951.

One-hundred-fifty patients with rheumatic fever and various other collagenous diseases were treated with aureomycin, terramycin and chloramphenicol on the hypothesis that these diseases may be caused by organisms of the pleuropneumonia group (L organisms). Following very small doses of terramycin (10 mg.) many patients had a flare-up which was thought to be due to antigenic release. This exacerbation could be controlled by the use of cortisone or ACTH. It is suggested that the L organisms may be the primary cause of rheumatic fever and that the streptococcus may merely be a secondary factor. R. W.

Response of Tuberculin Skin Test to ACTH and Cortisone in Tuberculous Guinea Pigs. Derbes, V. J., Dent, J. H., Weaver, N. K., and Vaughan, D. D.: Proc. Soc. Exper. Biol. & Med. **75**: 423, 1950.

Guinea pigs were infected by a subcutaneous injection of virulent tubercle bacilli. All animals subsequently showed definite evidence of the presence of tuberculous infection and, after 6 weeks, each showed a strongly positive tuberculin reaction. The tuberculin reaction in these animals was not altered by the daily injection of 1 mg. of cortisone beginning on the day prior to infection and continuing until the end of the period of observation. The tuberculin reactions were modified but not abolished by the administration of 10 mg. of ACTH daily for 7 days or of 20 mg. of cortisone for 3 days after the animals were infected. Histopathologic changes in the lesions before and after the injection of the hormones consisted of a quantitative diminution in the inflammatory exudate rather than a qualitative change in its cytologic structure. When smaller doses of the hormones were injected for varying periods of time after infection, there was no demonstrable effect on the tuberculin reaction. B. S.

Case of Periarteritis Nodosa Treated With Benadryl and Penicillin. Schrager, N.: Acta med. Orient. **9**: 293, 1950.

A case of periarteritis nodosa, confirmed by biopsy studies, recovered after combined diphenhydramine hydrochloride and penicillin treatment. The writer admits that the patient's recovery is not irrefutable proof of the efficacy of the treatment, but notes that the combined Benadryl-penicillin treatment has been used by other authors with good results. H.

Antihistamines in Dysmenorrhea. MacPherson, C.: Canad. M. A. J. **64**: 448, 1951.

Following the observation that substantial doses of adrenalin would often produce dramatic relief of dysmenorrhea, 28 patients with severe uterine cramps were given large doses of various antihistamines during the first 24 hours of menses. Twenty of these individuals reported excellent relief from pain. The author suggests that dysmenorrhea in certain patients may be due to an allergy to secretions which are in the uterus only at the menstrual period. R. W.

Regular Diurnal Physiological Variation in Eosinophil Levels in Five Stocks of Mice. Halberg, F., and Visscher, M. B.: Proc. Soc. Exper. Biol. & Med. **75**: 846, 1950.

Circulating eosinophil levels were studied in blood samples taken from mice during midnight and morning hours. In 4 inbred strains and in 1 hybrid group of mice, the midnight levels were much lower than the morning counts. Since the mouse is a nocturnal animal, it is suggested that normal activity constitutes a physiological stress capable of eliciting the eosinopenic response. B. S.

Experimental Production of "L. E." Cells. Moyer, J. B., and Fisher, G. S.: Am. J. Clin. Path. **20**: 1011, 1950.

In lupus erythematosus there is found in the bone marrow a characteristic cell known as the L. E. cell. In persons affected with lupus erythematosus, there is also present a plasma factor, which is capable of inducing the formation of L. E. cells from normal blood cells. When plasma containing the L. E. factor was incubated with living neutrophiles, no L. E. cells were formed. Upon the addition of fresh lymphocytes, L. E. cells were formed and the speed of this

reaction was increased when the lymphocytes had been subjected to freezing so that bare lymphocytic nuclei were free. With supravital staining, the process of phagocytosis of lymphocytic nuclei by the neutrophiles and the subsequent lysis of these inclusions was directly observed. Nuclei of polymorphonuclear leucocytes did not provoke similar phagocytosis. K.

Evidence of Adreno-Cortical Stimulation by Autohemotherapy. Sauer, G. C.: J. Invest. Dermat. **16**: 177, 1951.

Twelve dermatologic patients and 8 normal controls were given, in various sequences, 10 c.c. of autohemotherapy subcutaneously, 0.5 c.c. of epinephrine 1-1000 subcutaneously, and 10 c.c. of saline intramuscularly at weekly intervals. The effect of each injection on the total number of circulating eosinophiles was measured. The results showed a 42 per cent decrease in the total number of eosinophiles following autohemotherapy, a 51 per cent fall following epinephrine, and a 10 per cent drop after saline. Daily injections of autohemotherapy produced no greater change in the eosinophile count than was obtained by a single injection. Since the adrenal cortex is apparently stimulated by autohemotherapy, it is suggested that this finding may explain the benefit often obtained in certain dermatologic conditions following this procedure. R. W.

Diphtheria Immunization Studies of Students in an Urban High School. James, G., Longshore, W. A., and Hendry, J. L.: Am. J. Hyg. **53**: 178, 1951.

Six hundred-twenty-five high school students from a population which had had mass immunization for diptheria 5 years previously were given booster injections consisting of various types and doses of diphtheria toxoids. In addition, blood titres for antitoxin levels were obtained in part of the group before and 3 months after injection. The sera of 74 per cent of those immunized "sometime in the past" and 92 per cent of those known to have been immunized within 5 years had a titre equal to or greater than that corresponding to Shiek negativity (.004 unit per ml.). The proportion of levels of .004 unit/ml. or greater falls with the lapse of time; 46 per cent with a history of immunization 5 to 10 years earlier had levels of .004 or greater and only 33 per cent had this level after 10 or more years. These figures may relate to the use of toxin-antitoxin or fluid toxoid antigens in previous years as well as to a time factor. No severe reactions were encountered with any of the preparations used. Only 7 had febrile reactions; 1 developed a fever of 101 degrees and the others had temperatures under 100 degrees, none persisting for more than 2 days. Methanol-purified alum precipitated toxoid produced fewer reactions that the standard precipitated or fluid toxoids. All 3 were effective antigens. Significantly fewer reactions were obtained with 0.1 ml. doses (65 per cent with reactions less than 10 mm. erythema) than with 0.5 ml. doses (45 per cent "negatives"). However, significantly higher antitoxin titres were obtained with a dose of 0.5 ml. than with an 0.1 ml. dose, regardless of the antigen employed. Children with relatively larger local reactions also evidenced a somewhat better antibody response than those with lesser local reactions regardless of initial titre, although the final titre of antitoxin was dependent upon the initial titre. It is recommended that, in school age children, a single injection of 0.5 ml. of purified precipitated toxoid should be given every 5 years as a stimulating dose. K.

Febrile Reactions to Para-Aminosalicylic Acid. Kreis, B., Libert, A., Paqueline, F., and Abric, J.: Presse méd. **58**: 1285, 1950.

Febrile reactions to para-aminosalicylic acid occurred in 8 tuberculous patients receiving from 10 to 18 gm. of the drug per day. The reaction was noted

between the eighth and thirty-eighth day of the treatment after the ingestion of from 80 to 608 Gm. of the drug. The size of the daily dose was not a determining factor. Both sexes with various forms of tuberculosis were affected. The rise of temperature was associated with a morbilliform eruption in one patient. The rise of temperature was abrupt, oscillating or progressive up to 104° F. These reactions suggested acute dissemination of the tuberculosis. A favorable response to antipyretics was noted. The diagnosis was based on the sudden and definite drop in temperature after withdrawal of the drug and the immediate rise upon readministration of the drug.

The Lethal Effect of Triethylene Glycol Vapor on Dried Air-Borne Bacteria. Robertson, O. H., and Lester, W., Jr.: Am. J. Hyg. **53**: 69, 1951.

Dried hemolytic streptococcus Group C or *Staphylococcus albus* were dispersed as a dust or as small droplets into an experimental, controlled-atmosphere room. The size of the dispersed particles was measured. Triethylene glycol was then rapidly sprayed into the room and its atmospheric concentration was determined. The rate of bacterial kill was measured as the above conditions were varied. It was found that dried bacteria are highly susceptible to the lethal action of glycol vapor and over a wider range of humidity than are bacteria from freshly atomized broth cultures. The rate of kill of air-dried bacteria was greatest in a humidity range of from 15 to 20 per cent, and glycol vapor became less bactericidal as humidity was increased. Bacteria air-dried for 5 hours were killed almost twice as fast as those atomized directly into the low humidity chamber, but bacteria air-dried for 20 hours were as resistant to glycol at low humidity as the fresh bacteria. Glycol vapor was found to be more bactericidal against bacterial particles of 3 or 4 μ than against particles as large as 8 or 10 μ, although it was still effective against the latter sizes. The rate of kill for saliva-suspended bacteria which were subsequently air dried increased as humidity increased. This could not be attributed to particle size differences and may relate to the physical properties of saliva mucoprotein. K.